UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/409,613	10/01/1999	ARMIN HAROLD CHRISTOFFERSON	R09-99-091	5640

24033 7590 06/03/2002

KONRAD RAYNES VICTOR & MANN, LLP
315 SOUTH BEVERLY DRIVE
SUITE 210
BEVERLY HILLS, CA 90212

EXAMINER
PHAM, HUNG Q

ART UNIT	PAPER NUMBER
2172	

DATE MAILED: 06/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/409,613	Applicant(s) CHRISTOFFERSON ET AL.	
	Examiner HUNG Q PHAM	Art Unit 2172	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 April 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant admitted prior art in view of Cormen et al. [Introduction to Algorithms, ISBN 0-07-013143-0 McGraw-Hill] and Main et al. [Data Structures and other Objects Using, ISBN 0-8053-7470-1].

Regarding to claims 1, 10 and 19, applicant admitted prior art teaches a method, system and an article of manufacture for processing such as adding or updating an input file in a file system (applicant admitted prior art, page 1, line 10-page 2, line 2), but fails to disclose the steps of: ***applying a function to map the input file name to a value; and processing a data structure to determine whether there is a preexisting file in the file system having a name that maps, according to the function, to the same value to which the input file name maps, wherein two files that map to a same value according to the function are capable of having a same name***.

Cormen teaches a method for storing a key by using a hash function as function to compute and map the key to a hash table slot as the data structure; each key is a unique identifying value and the hash function maps key values to array indexes (Cormen, Fig. 12.2, page 222).

Main teaches a method for storing information of tractor record by using hash function and hash table (Main, pages 545-546). Main further discloses a method by searching the hash table for a record with a particular key as a file name (Main, page 548, the is-present function, lines 23-28) as the step of processing the hash table.

By combining the Cormen technique that using the hash function and hash table and Main searching method, when a first key is mapped to a position of the hash table and a second key that mapped to the same slot indicated by Main searching, obviously, the second key is capable of having the same value with the first key. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was

made to modify the applicant admitted prior art method, system and article of manufacture for processing such as adding or adding an input file in a file system by applying the Cormen technique of hash function and hash table instead of the conventional list of all file names by using file names as the keys, hashing the file name to a value, storing the file name in the hash table and when a new file is added to the file system, the file name is checked by Main searching technique to determine if its index according to the hash value is occupied or in other words the input file name has the same name with a preexisting file in the file system. By modifying the applicant admitted prior art file system with the technique of Cormen and Main, the modified system will be optimized by speeding up the search and using less the storage space for file names.

Regarding to claims 2, 11 and 20, applicant admitted prior art, Cormen and Main teaches all the claimed subject matters as discussed in claims 1, 10 and 19, Cormen further discloses ***the mapped-to values require fewer bits of storage than the file names*** (Cormen, page 222).

Regarding to claims 3, 12 and 21, applicant admitted prior art, Cormen and Main teaches all the claimed subject matters as discussed in claims 1, 10 and 19, Cormen further discloses ***the function is a hash function that maps the input file name to an integer value, and wherein the data structure includes an entry for each possible***

integer value capable of being generated from the hash function (Cormen, page 222).

Regarding to claims 4, 13 and 22, applicant admitted prior art, Cormen and Main teaches all the claimed subject matters as discussed in claims 3, 10, 21, but fails to disclose the step of ***determining whether the entry for the integer value to which the input file name maps indicates the presence of one preexisting file mapping to the same integer value as the input file name***. However, the Main basic storage of information is computing the index of the hash table by hashing the key and if the hash table *data[hash(key)]* does not already contain a record, then store the record in the hash table *data[hash(key)]* and end the storage algorithm (Main, page 547, the first three lines). Thus, instead of storing the record in the table *data[hash(key)]*, the table could be used to store the key and if the hash table *data[hash(key)]* does not already contain a key, then store the key in the hash table *data[hash(key)]* and end the storage algorithm. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the applicant admitted prior art, Cormen and Main method by using the modified Main method of determining the presence of one preexisting file in order to check the status of a new file name in the file system.

Regarding to claims 5, 14 and 23, applicant admitted prior art, Cormen and Main teaches all the claimed subject matters as discussed in claims 4, 13 and 22, Cormen further discloses ***the data structure is a one-dimensional array*** (Cormen, hash table,

page 222), but no one discloses ***each entry is capable of having one of two values, further comprising setting the entry to a first value if there is one preexisting file name in the file system that maps to the integer value for the entry, and wherein determining whether there is one preexisting file comprises determining whether the entry for the integer value to which the input file name maps has the first value***. However, the indexes of Cormen hash table either contain a hash value of key k as the first value if there is a key that maps to the value of the table entry (Cormen, Fig. 12.2, page 222) or a null value by default if there is no key that maps to that index (the step of determining whether there is one preexisting file is discussed in claim 4). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the applicant admitted prior art, Cormen and Main method by including the step of setting the first entry to a first value if there is one preexisting file name in the file system and determining the entry has the first value in order to check the status of a file name in the file system.

Regarding to claims 6, 15 and 24, applicant admitted prior art, Cormen and Main teaches all the claimed subject matters as discussed in claims 1, 10, 19, but fails to disclose the steps of ***applying the function to each file name in the file system to map each file name to one value; and indicating in the data structure, for each file name, that there is one preexisting file for the value to which the file name maps***. However, as disclosed in Fig. 12.2, page 222 of Cormen, the hash function is applied to each key in the set universe of key to map each key to one value and the hash table T,

the index that is mapped by the hash value contains the value of the key for indicating there is one preexisting key for the value to which the key maps. Thus, instead of the set universe of key, the Cormen method could be applied to each file name as the key in the file system. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the applicant admitted prior art, Cormen and Main method by mapping each file name to one value and indicating in the data structure the present of the file in order to map the file names of the file system to the hash table.

Regarding to claims 7, 16 and 25, applicant admitted prior art, Cormen and Main teaches all the claimed subject matters as discussed in claims 6, 15 and 24, applicant admitted prior art further discloses ***the input file is the subject of an access request*** (applicant admitted prior art, page 1, lines 10-26). None of them discloses the steps of ***scanning each file in the file system to determine if there is at least one preexisting file having the same name as the input file name if there is one preexisting file in the file system having a name that maps, according to the function, to the same value to which the input file name maps***. However, an input file name as a key is hashed by using the hash function as discussed in claim 1 and could be compared with the hash values of other keys in the file system by a conventional scanning process. If the comparing process returns a file name with its hash value is equal to the hash value of the input file name, the file could be accessed by the applicant admitted prior art access method as in page 1 (applicant admitted prior

art, page 1, lines 10-19). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the applicant admitted prior art, Cormen and Main method by scanning each file in the file system to determine a preexisting file has a same hash value with the input file name in order to optimize the access time of a file in a conventional file system.

Regarding to claims 8, 17 and 26, applicant admitted prior art, Cormen and Main teaches all the claimed subject matters as discussed in claims 7, 16 and 25, applicant admitted prior art further discloses the step of adding a file to the file system, the directory must be searched to determine if the file already exist on the media (applicant admitted prior art, page 1, lines 20-22). The input file will be added if the input file name does not exist or rejected otherwise is a conventional operation in a conventional file system such as Window 95. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the applicant admitted prior art file system by scanning the file system as discussed in claim 7 instead of searching the directory; adding the input file if there is no preexisting file and rejecting otherwise in order to speed up the step of adding a new file in a file system.

Regarding to claims 9, 18 and 27, applicant admitted prior art, Cormen and Main teaches all the claimed subject matters as discussed in claims 7, 16 and 25, applicant admitted prior art further discloses the step of updating a file to the file system by using a list of all file names in the file system, the list will be checked to determine if the file

already exists in the file system (applicant admitted prior art, page 1, line 27-page 2, lines 2). The input file will be updated if the input file name exists or rejected otherwise is a conventional operation in a conventional file system such as Window 95. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the applicant admitted prior art file system by scanning the file system as discussed in claim 7 instead of searching list of all file names; updating the input file if there is a preexisting file and rejecting otherwise in order to speed up the step of updating a file in a file system.

Regarding to claims 28, 31 and 34, applicant admitted prior art, Cormen and Main teaches all the claimed subject matters as discussed in claims 1, 10 and 19, applicant admitted prior art further discloses the input file is the subject of an access request such as adding a file to a file system, the file system is searched to determine if there is already a file having the name of the file to store (applicant admitted prior art, page 1, lines 10-26). If the hash table indicates a preexisting file by using the Main searching technique (the step of processing the data structure for the indication of a preexisting file is discussed in claimed 1), an operation could be performed by showing a message that indicates a preexisting file. The performance of this operation is a conventional operation in a conventional file system such as Window 95. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the applicant admitted prior art, Cormen and Main method by searching the file system for one preexisting file if the data structure indicates the preexisting file

has the same hash value with the input file and performing and operation if the file system includes the preexisting file in order to optimize the method of adding a file in a file system.

Regarding to claims 29, 32 and 35, applicant admitted prior art, Cormen and Main teaches all the claimed subject matters as discussed in claims 28, 31 and 34, applicant admitted prior art further discloses ***applying update data to the preexisting file having the same name as the input file if the file system includes one preexisting file having the same name as the input file*** (applicant admitted prior art, page 1, line 27-page 2, line 2).

Regarding to claims 30, 33 and 36, applicant admitted prior art, Cormen and Main teaches all the claimed subject matters as discussed in claims 28, 31, 34, but fails to disclose the steps of ***returning an error if the file system includes one preexisting file having the same name as the input file; and adding the input file to the file system if the file system does not include one preexisting file having the same name as the input file***. However, a conventional file system as Window 95 would be ***returning an error if the file system includes one preexisting file having the same name as the input file; and adding the input file to the file system if the file system does not include one preexisting file having the same name as the input file***. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the applicant admitted prior art, Cormen and

Main method by including the technique of Window 95 of returning an error or adding the input file name in order to add a file to a file system.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Pham whose telephone number is 703-605 4242. The examiner can normally be reached on Monday-Friday, 7:00 Am - 3:30 Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, VU, KIM YEN can be reached on 703-305 4393. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746 7239 for regular communications and 703-746 7238 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305 3900.

Examiner: Hung Pham

May 28, 2002

KIM VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100